Astronomy 100 Spring Semester 2014
"Life and Intelligence in the Universe"

1. Overview

Astronomy 100 is a seminar course intended for freshmen interested in astronomy and astrophysics. But other majors and non-freshmen are welcome. The topic chosen for this semester is "Astrobiology: Life and Intelligence in the Universe."

2. Professor

Dr. Edison Liang
Office: Rm 342 Herman Brown Hall (HBH)
Office Hours: TBD
Telephone: X3524; Email: liang@rice.edu

3. Class Website: http://spacibm.rice.edu/~liang/astr100

4. Class Structure

This is a seminar course (one hour per week) so students are expected to do most of the talking using powerpoints. After an introduction by the professor, students will take over the weekly classes by presenting summaries and commentary on each chapter of the text plus related material from the web and other literature, followed by round-table discussions. Occasionally (especially when the professor is on travel) guest lecturers may come and participate.

Class time to be decided during first/organization meeting on **Wed 1/15/14 at 2-3 pm in HBH 223**. (Prof. Liang will be in that room from 1:45 pm until 3:15 pm for students who have 2 pm class). Students will vote on the preferred meeting times. Multiple sections may be scheduled if there is a large enrollment. Email instructor with your preferred times if you cannot make the first meeting.

5. Text

"Life in the Universe"
by J. Bennett & S. Shostak
© Second or later Edition 2007, Pearson Paperback

This is an excellent (though rather non-mathematical) comprehensive discussion of astrobiology, which will serve as a framework for topics covered in class. Students will take turns to summarize and discuss each chapter plus related material from the web and other literature. Nonetheless, students are expected to read the entire book during the semester and participate in round table discussions of all chapters.

Other references: "Intelligent Life in the Universe"

by I. S. Shklovskii & C. Sagan
© 1998 Emerson-Adams
“An Introduction to Astrobiology”
edited by D.A. Rothery, I. Gilmour and M.A. Sephton
2003 edition Cambridge University Press
“Complete Course in Astrobiology”
edited by G. Horneck & P. Rettberg
2007 edition Wiley-Vch, Germany

6. Topical Sequence

The topical sequence follows the “Life in the Universeä textbook”. Below is a tentative schedule based on 13 class weeks besides the first week.

Week #	***Topic***	***Text Chapter***	***Speaker***
01	A Universe of Life	01	Student/Professor
02	Science of Life	02	Student
03	Universal Context of Life	03	Student
04	Habitability of Earth	04	Student
05	Nature of Life on Earth	05	Student
06	Origin and Evolution of Life on Earth	06	Student
07	Search for life in solar system	07	Student
08	Mars	08	Student
09	Life on Jovian Moons	09	Student
10	Nature and Evolution of Habitability	10	Student
	& Habitability outside the solar system	11	Student
11	Search for Exoplanets		Student
12	Search for Extraterrestrial Intelligence	12	Student
13	Interstellar Travel & Fermi Paradox	13	Student

7. Grade

Class participation and attendance 10%
Powerpoint presentations: 60%
Final project report: 30%